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SYRPHIDÆ IN THE HYDROPHYTIC AREA.

BY RAYMOND C. OSBURN,

NEW YORK, N. Y.

Very few of the Syrphidæ actually live in the water at any time of the life cycle, though certain of the Eristalinæ, which have "rat-tailed" larvæ, inhabit muddy pools and saturated filth during the larval stage. It is true that many species may be found about flowers in swamps, but often these are merely strong fliers that have found their way there for the sake of visiting the flowers and have no relation to the hydrophytic environment otherwise. They must be classed as stragglers. A few species have been reared from larvæ taken in the flowing sap of trees and the larvæ of *Chilosia alaskensis* Hunter and *C. hoodiana* Bigot live in the resinous sap of coniferous trees just beneath the bark where they produce the timber blemish known as "black check."

The adults of certain species habitually frequent the marsh grasses at the edge of streams and in swamps, and may be considered a part of the regular fauna of such situations. Such are *Platychirus quadratus* Say, *P. hyperboreus* Staeg., and *P. chatopodus* Williston. These species are not very strong fliers, as Syrphids go, and are seldom found far from swampy regions. Their breeding habits and those of the larvæ are unknown. All of them have been taken at Ft. Lee, N. J., and at Van Cortlandt Park, New York.

Of the species which breed in wet filth may be mentioned *Eristalis tenax* Linne, *E. bastardi* Macquart and *E. æneus* Fabricius, all of which belong to the fauna of the hydrophytic region, even though the adults may wander long distances from the water in visiting flowers. These species may frequently be taken around New York City, about their breeding places. The writer has observed tenerals of *E. meigenii* emerging from a pile of saturated horse manure.

Helophilus latus Loew and *H. hamatus* Loew are usually found only about marsh flowers or close to marshy places. Although their larval habits are unknown the constantly limited distribution of the adults about swamps and pools seems to indicate that they belong to the hydrophytic area. *Tropidia quadrata* Say is also found pretty constantly about marsh grasses and at the edges of wet areas.

Criorhina verbosa Walker is usually taken in early spring about willow bloom, but whether it has any other relation to the swamp, or whether it emerges at a time when it is compelled to seek the willows as the only available source of food is questionable.

It appears that the few Syrphidæ larvæ which have an aquatic habitat do not frequent clear streams or pools but always stagnant waters that contain a large amount of organic matter. The special adaptation of the larva by which they are able to maintain respiration while submerged, lies in the elongation of the terminal appendage containing the posterior stigmata. This organ can be elongated so as to reach the surface in shallow water and can be withdrawn. This applies also to species living in sap and resin.

THREE NEW CICINDELIDS.

BY EDW. DOUBLEDAY HARRIS,

NEW YORK CITY.

Cicindela Smythi new species (fig. 1).

Head and thorax green with coppery reflections; elytral ground dull coppery, densely punctate green; markings entire and all very broad, marginal band merged with both lunules and one third of the elytral width; humeral lunule a trifle more than one third the elytral length, crescent shaped, recurved at extremities; middle band sharply reflected near suture, and terminating with hook; apical lunule at apex continued forward on sutural line.

Eyes large, prominent and converging in front; front finely rugose, a single seta above the eye; thorax densely punctate; beneath green, shiny, naked except at sides; basal joints of antenna, femur and tibia of the front and middle leg, sides of thorax and body clothed with white hairs; legs green, shiny, very long—the femur of hind leg being as long as combined thorax and elytra, and the combined femur, tibia and tarsus being more than twice the length.

Not as parallel in outline as *chlorocephala*, more metallic, elytra more rugose, maculation much broader, the lunules and marginal band confluent, not separated, much more pilose. Length 8–9 mm.; length hind legs 15 mm.

Taken by Eugene G. Smyth at the ocean side of Padre Island, Texas, in June, running on the sand with *Saulcyi* and *media*, not plentiful, very swift on foot.

Allied to *C. chlorocephala* Chevr., and possibly a variety of this